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EXAMINER

BONZELL, PHILIP J

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/516,668	Applicant(s) PADAN, NIR	
	Examiner PHILIP J. BONZELL	Art Unit 3644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 30-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/1/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 30-36 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 9/2/2008.
2. Applicant's election with traverse of a system in the reply filed on 9/2/2008 is acknowledged. The traversal is on the ground(s) that there would not be a serious search burden on the Examiner. This is not found persuasive because the search would require different search words.

The requirement is still deemed proper and is therefore made FINAL.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the uninhabited aerial vehicle, civilian aircraft, multi-role rotary-wing aircraft, t-valves, external fuel container, the electronic countermeasures, and the projectiles must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended

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replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 7 objected to because of the following informalities: the first line of the claim has “dual.. functionality”, this is taken by the examiner to be a simple typing mistake. Appropriate correction is required.

Claim Rejections - 35 USC § 112

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4. Claims 1-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. For Claim 1, lines 11-13 claim a single functionality external fuel tank carrier pylon....carried fuel tank” which was already claimed in the previous lines, it is unclear if this is the same pylon and tank or if this is a secondary single function system.

b. For Claim 10, an “Uninhabited Aerial Vehicle (UAV)” is claimed but it is dependent on the F-16 of claim 9 which is not a UAV; it is unclear if the Applicant is claiming to make an F-16 a UAV. What structure is being inherently claimed?

c. For Claim 11, a “civilian aircraft” is claimed but it is dependent on the F-16 of Claim 9 which is not civilian. What structure is being claimed by the term “civilian”? How does the ownership of the aircraft define structure?

d. For Claim 12, a "multi-role rotary wing aircraft" is claimed but it is dependent on the F-16 of Claim 9 which is not a rotary aircraft.

e. For Claim 13, an “external fuel container” is claimed but it is not shown in the figures and based on the specification it seems to be the tank that is attached the pylon. Therefore it is indefinite because it is not clear if this is the tank that is previously claimed or a new container.

f. For Claim 15, a “600-gallon fuel tank” is claimed but it is dependent on Claim 14 which already states that the fuel tank is “270-gallons” Therefore it is unclear how large the fuel tank is.

5. Claim 2 recites the limitation "the fuel transfer system", "the compressed air system", and "the electrical system" in lines 3, 7, 10, 14, 17, and 21. There is insufficient antecedent basis for this limitation in the claim.

6. Claim 3 recites the limitation "the electrical control system", "the fuel transfer system", and "the compressed air system" in lines 3, 5, 9, and 12. There is insufficient antecedent basis for this limitation in the claim.

7. Claim 4 recites the limitation "the fuels transfer system", "the compressed air system", and "the electrical system" in lines 6, 9, and 12. There is insufficient antecedent basis for this limitation in the claim.

8. Claim 24 recites the limitation "the at least on outboard stores" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. Claims 1-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold (US Patent #4790350) in view of Grafwallner (US Patent #5660358) and Walker (US Patent #4589615).

g. For Claim 1, figure 3 of Arnold '350 discloses a system for increasing the fuel storage volume and fuel carriage capacity of an aerial vehicle wherein there is a single functionality external fuel tank pylon (P) that provides fuel tank carriage capability and fuel transfer and control from at least on tank (22). Arnold '350 is silent about the single function tank being connected to a dual functionality system, however, figure 4 of Grafwallner '358 teaches the use of a single function tank (4) that is connected to a dual function tank (3) that provides fuel tank carriage capability and fuel transfer and control capabilities from the tank (3) and to support fuel transfer and control capabilities from the single function tank (4). Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Arnold '350 with the dual function system of Grafwallner '358 in order for a greater increase of fuel being able to be carried while reducing the complexity of a system wherein two separate lines are used for the engine.

h. While Grafwallner '358 teaches a two tank system and Arnold teaches a single pylon and tank system, both Arnold '350 and Grafwallner '358 are silent about having multiple pylon and tank systems, however, figure 2 of Walker '615 teaches a two pylon (19) system that hold two store. In the case of figure 2, the stores are missiles, but in column 1, line 12 of Walker '615 teaches that the

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stores could easily be fuel tanks. Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Arnold '350 and Grafwallner '358 with a dual external fuel tank system.

i. Figure 3 of Arnold '350 discloses a stores transfer kit that is aerodynamically shaped and encloses a fuel line and fuel control line that connect the tank to the rest of the fuel system.

j. While Arnold '350 is silent about an alternative fuel transfer and control path between the single function tank and the dual function tank, figure 4 of Grafwallner '358 teaches a primary line (15) and an alternative line (23) that connect the two tanks. Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Arnold '350 with the alternative path of Grafwallner '358 in order to provide redundancy.

k. For Claims 2-4, figure 8 of Arnold '350 discloses the use of fuel connector (121), compressed air connector (136) and an electric power and signal connector (120) that are used to control the path of the fuel from the tank (55) to the vehicle through the store transfer kit. While Arnold '350 is silent about these lines being used for connecting two tanks together, the Examiner takes Official Notice that the use of a fuel path, and air path, and a power and signal path are well known and used in the art in order to control the fluid flow of the fuel.

Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to use the paths to connect a single function tank to a dual function tank in order to control fuel between them.

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l. For Claim 5, figure 8 of Arnold '350 discloses a fuel gauge (119) for monitoring the quantity of fuel in the store (column 4, line 36). Figure 8 also discloses a compressed air connector (136) that is used to control the fuel transfer sequence. While Arnold '350 is silent about displaying the status of the fuel tank, the Examiner takes Official Notice that the use of fuel display are commonly used so that the people of the vehicle know how much fuel is in a given tank. Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to include a display to show the status of the fuel.

m. For Claim 6, figure 8 of Arnold '350 discloses a fuel gauge (119) as a specific indicator which is used to control the transfer of the fuel stored.

n. For Claim 7, figure 8 of Arnold '350 teaches the use of valves (128 and 137), and figure 4 of Grafwallner '358 teaches the use of valves (28, 30, and 31) that control the fuel transfer sequence, however, both are silent about using a T-valve. The Examiner takes Official Notice that the use of T-valves are widely used in fuel system because of their reliability, therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Arnold '350 and Grafwallner '358 with T-valves in order to create a reliable and controllable fuel system.

o. For Claim 8, column 1, lines 15-16 disclose that the use of this system is for tactical or military aircraft.

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p. For Claims 9-12, while Arnold '350, Grafwallner '358, and Walker '615 are silent about the use of the system on and F-16, a UAV, a civilian aircraft, or a rotary-wing aircraft, the Examiner takes Official Notice that this system could be used on any aerial system that needs to extend its flight time as external fuel tanks are well known and used on all types of aircraft. Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to place this system on these known aircraft in order to maintain a longer flight duration.

q. For Claims 13-16, 25, column 1, lines 33-37 of Arnold '350 discloses, "the fuel tanks or pods are also provided with aircraft mounting strongbacks which are universally adaptable to permit a variety of fuel tank sizes and configurations to be readily fitted to a variety of aircraft". Column 1, lines 66-67 of Arnold '350 discloses, "Aircraft fuel tanks are generally standardized in size and hold 150, 300, 600 or more gallons of fuel."

r. For Claims 17 and 18, figure 3 of Arnold '350 discloses a pylon that is a novel, specifically designed and developed device.

s. For Claim 19, figure 3 of Arnold '350 discloses an external fuel store that is transparent to the vehicle as it is easily integrated into the vehicles normal fuel system.

t. For Claim 20, figure 9 of Arnold '350 discloses the ejector system which is carried by the stores transfer kit.

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- u. For Claim 21, figure 6 of Arnold '350 discloses a secondary control and emergency release means in the form of locking pins (74).
- v. For Claim 22, figure 3 of Arnold '350 discloses a fuel pylon (P) that is suspended on an inboard "wet" stores station having fuel transfer, control, refueling, monitoring, and jettison capabilities.
- w. For Claim 23, while Arnold '350 discloses an external fuel carrier pylon having jettison capabilities, it is silent about one on an outboard part of a wing, however, figures 1 and 2 of Walker '615 teach a pylon on both the inboard and outboard portion of a wing. Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Arnold '350 with the outboard pylon of Walker '615 in order to provide more auxiliary fuel sites.
- x. For Claim 24, while Arnold '350 is silent about an outboard stores station that is dual "pseudo-wet/dry" figures 1 and 2 of Walker '615 teach an outboard store station that is "pseudo-we/dry" as it can be used for both missiles as shown and for auxiliary fuel tanks (column 1, line 12). Therefore it would have been obvious to someone of ordinary skill in the art at the time of the invention to modify Arnold '350 with the "pseudo-we/dry" outboard store station of Walker '615 in order to provide a multipurpose store station that can be modified depending on the needs of the vehicle.
- y. For Claims 26 and 27, figure 3 of Arnold '350 discloses a store transfer kit (52) that is operative in the transfer of fuel stores between at least two carriers in the form of the tank (22) and internal tank that is carried by the aircraft.

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z. For Claim 28, figure 8 of Arnold '350 discloses an electrical line (120) that is used to transfer electronic countermeasures in the form of control the amount of fuel that is sent to the vehicle carrier from the auxiliary carrier.

aa. For Claim 29, figure 8 of Arnold '350 discloses a fuel line (121) that transfers fuel or projectiles between the auxiliary carrier and the vehicle carrier.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Baum '501 discloses a multi-pylon system that can include fuel tanks that are aerodynamically designed; DeLong '250 discloses auxiliary fuel tanks on a helicopter; Johnson '671, Stavely '400, Bowers '913, Weber '402, Ralph '412, Farley '069, Ostroff '369, and Johnson '699 disclose auxiliary fuel tanks on aircraft.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHILIP J. BONZELL whose telephone number is (571)270-3663. The examiner can normally be reached on M-Th 8-5;.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mansen can be reached on (571)272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/P. J. B./
Examiner, Art Unit 3644

/Michael R Mansen/
Supervisory Patent Examiner, Art Unit 3644

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